

## CLAIMS

What is claimed is:

1        1. A servo write head for magnetic tape, the head comprising:  
2              a substantially planar head surface; and  
3              a leading edge, the leading edge being disposed adjacent to the head  
4              surface such that the tape contacts the leading edge before passing over the  
5              head surface, the leading edge being rounded so as to form an air bearing  
6              between the head surface and the tape.

1        2. The head as set forth in claim 1, wherein the rounding of the  
2              leading edge is accomplished through a selected one or more of blending,  
3              grinding, machining, and faceting to the head surface.

1        3. The head as set forth in claim 1, comprising a trailing edge, the  
2              trailing edge being disposed adjacent to the head surface such that the tape  
3              passes over the trailing edge after passing over the head surface, the trailing  
4              edge being rounded.

1        4. The head as set forth in claim 3, wherein the rounding of the  
2              trailing edge is accomplished through a selected one or more of blending,  
3              grinding, machining, and faceting from the head surface.

1        5. A servo write head for magnetic tape, the head comprising:  
2              an upper ferrite wafer having a spacer; and  
3              a non-magnetic material in the spacer to form a ferrite-nonmagnetic-  
4              ferrite arrangement for writing a portion of a servo pattern to the tape.

1           6. The head as set forth in claim 5, wherein a plurality of the  
2       heads are formed through a batch processing of the upper ferrite wafer.

1           7. The head as set forth in claim 5, comprising a layer of magnetic  
2       material having at least one magnetic gap over the non-magnetic material to  
3       form the magnetic pattern for writing the servo pattern to the tape.

1           8. The head as set forth in claim 5, comprising a lower ferrite  
2       wafer mated to the upper ferrite wafer to complete a magnetic circuit around  
3       the gap.

1           9. The head as set forth in claim 8, comprising an inductive  
2       winding, wherein the head has a channel through which the inductive winding  
3       passes.

1           10. The head as set forth in claim 8, wherein a plurality of the  
2       heads are formed through a batch processing of the upper and lower ferrite  
3       wafers.

1           11. The head as set forth in claim 5, wherein a non-magnetic space  
2       is formed in the upper ferrite wafer proximate to the gap to enhance the  
3       magnetic circuit.

1           12. The head as set forth in claim 5, wherein the upper ferrite wafer  
2       has a substantially planar head surface; and  
3              a leading edge, the leading edge being disposed adjacent to the head  
4       surface such that the tape contacts the leading edge before passing over the

5 head surface, the leading edge being rounded so as to form an air bearing  
6 between the head surface and the tape.

1           13. The head as set forth in claim 5, comprising an inductive  
2 winding, wherein the inductive winding passes around a portion of the upper  
3 ferrite wafer.

1           14. The head as set forth in claim 5, wherein the upper ferrite wafer  
2 forms a magnetic shunt around the gap.

1           15. A servo write method for magnetic tape, the method comprising  
2 the steps of:

3           passing the tape over a substantially planar head surface having a  
4 leading edge, the leading edge being disposed adjacent to the head surface  
5 such that the tape contacts the leading edge before passing over the head  
6 surface, the leading edge being rounded so as to form an air bearing between  
7 the head surface and the tape; and

8           using the head to write servo position code onto the tape.

1           16. The method as set forth in claim 15, wherein the rounding of  
2 the leading edge is accomplished through a selected one or more of blending,  
3 grinding, machining, and faceting to the head surface.

1           17. The method as set forth in claim 15, comprising the step of  
2 passing the tape over a trailing edge, the trailing edge being disposed adjacent  
3 to the head surface such that the tape passes over the trailing edge prior to  
4 passing over the head surface, the trailing edge being rounded.

1        18. The method as set forth in claim 17, wherein the rounding of  
2                  the trailing edge is accomplished through a selected one or more of blending,  
3                  grinding, machining, and faceting from the head surface.

1        19. A method of making a servo write head for magnetic tape, the  
2                  method comprising the steps of:

3                  forming a spacer in an upper ferrite wafer of the head; and  
4                  placing a non-magnetic material in the spacer to form a ferrite-non-  
5                  magnetic-ferrite arrangement for writing a portion of a servo pattern to the  
6                  tape.

1        20. The method as set forth in claim 19, wherein a plurality of the  
2                  heads are formed through a batch processing of the upper ferrite wafer.

1        21. The head as set forth in claim 19, comprising the step of  
2                  forming a layer of magnetic material having at least one magnetic gap over  
3                  the non-magnetic material to form the magnetic pattern for writing the servo  
4                  pattern.

1        22. The method as set forth in claim 19, comprising the step of-  
2                  mating a lower ferrite wafer to the upper ferrite wafer to complete a magnetic  
3                  circuit around the gap.

1        23. The method as set forth in claim 22, comprising the step of  
2                  adding an inductive winding, wherein the head has a channel through which  
3                  the inductive winding passes.

1           24. The method as set forth in claim 22, comprising the step of  
2         forming a plurality of the heads through batch processing of the upper and  
3         lower ferrite wafers.

1           25. The method as set forth in claim 19, comprising the step of  
2         forming a non-magnetic space in the upper ferrite wafer proximate to the gap  
3         to enhance the magnetic circuit.

1           26. The method as set forth in claim 19, comprising the step of  
2         passing an inductive winding around a portion of the upper ferrite wafer.

1           27. The method as set forth in claim 19, wherein the upper ferrite  
2         wafer forms a magnetic shunt around the gap.

1           28. The method as set forth in claim 19, wherein the upper ferrite  
2         wafer has a substantially planar head surface and a leading edge, the leading  
3         edge being disposed adjacent to the head surface such that the tape contacts  
4         the leading edge before passing over the head surface, the method comprising  
5         the step of rounding the leading edge so as to form an air bearing between the  
6         head surface and the tape.